

**Amendment to the Specification**

Please amend the first full paragraph of page 7 by breaking it into two separate paragraphs as follows, where additions relative to the original are indicated by underlines:

Referring next to FIG. 2, a Wheatstone (or resistance) bridge type electrical circuit **36** was formed incorporating two weight sensors **20** that demonstrate variable resistance  $R_1$  and  $R_2$  and two fixed resistors **22** that demonstrate substantially fixed resistance  $R_0$ , where the imbalance between the sensor voltages provided a measure of the weight imbalance at the legs **12**. As mentioned in the previous paragraph, weights measured by the sensors **20** can be used to send a weight difference or a weight ratio to the controller **30**. For example, the measure of imbalance between the two weight sensors **20** can be given by the simple ratio of  $(W1-W2)/(W1+W2)$ , where  $W1$  and  $W2$  represent the measured weight at each of the sensors **20**, respectively. In such circumstance, it will be readily appreciated that the range of imbalance is normalized between -1 and 1, thereby removing the need for calculating actual weight values and making the range of imbalance applicable for climbers of various weights. A zero reading means an exact balance ( $W1 = W2$ ) between the two sensors **20**, and an imbalance measure of  $\pm 1$  means instability resulting from either of the two sensors **20** registering a weight value that approaches zero. Thresholds for the aforementioned heightened alert displays **200B** and **200C** can be set by a choice of the values for the imbalance measure.

Battery **32** (for example, a conventional nine-volt battery) provides power to controller **30**, although it will be appreciated that other power sources could be employed, including, for example, solar cells or related photovoltaic devices. When equal weight is applied to both sensors **20**,  $R_1$  will equal  $R_2$  and the corresponding output voltages  $V_1$  and  $V_2$  will be equal. Contrarily, a weight imbalance on ladder **10** shows up as a difference between  $V_1$  and  $V_2$ . In the simplest system, output voltages  $V_1$  and  $V_2$  could be wired directly to meter **100**, as shown in FIG. 3A. In a preferred (but by no means necessary) system, the output voltages  $V_1$  and  $V_2$  will be further processed by either digital or analog electronics in controller **30** to provide a more reliable warning system. In one preferred embodiment, voltages  $V_1$  and  $V_2$  will be read by

controller **30** that would include an analog-to-digital (A/D) converter and a microprocessor (not shown). The microprocessor will control the tip warning system **60** according to a program stored into its memory where, as previously discussed, the tip warning system **60** may include one or more of the aforementioned alarms, such as the lights **50**, meter **100**, display **200**, audio system **40** or some combination thereof. The measured values from the weight sensors **20** are then used to calculate the imbalance according to an algorithm and compared to a predetermined threshold. If controller **30** detects imbalance beyond the predetermined threshold, at least one of the audio and visual alarms **40**, **50** are activated to alert the user. Tip warning system **60** can be programmed such that the companion audio alarm **40** responds either progressively (with, for example, a loudness or frequency level that increases concomitant to the aforementioned ladder safety category) or selectively (for example, not until a predetermined threshold). The indicia enabled by audio alarm **40** is beneficial in that a ladder user need not constantly maintain line-of-sight contact with a visual alarm to be apprised of a potentially dangerous ladder **10** operating condition. The two separate forms of indicia made possible by combining audio and video alarms **40**, **50** further improves the chances that a user will be alerted that a potentially dangerous ladder operating condition has been, or is about to be, reached. Operational status of tip warning system **60** could be ensured by including a confirmation signal, such as a simple, slow-period (i.e., low frequency) beep from the audio alarm **40** or a slow-period flash of light from the visual alarm **50**.